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| 09/623,756      | 09/08/2000  | Yoshiyuki Hiraga     | 20-4746P            | 6683             |

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EXAMINER

WILSON, DONALD R

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1713

DATE MAILED: 05/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-7

**Office Action Summary**

Application No.

09/623,756

Applicant(s)

HIRAGA ET AL.

Examiner

D. R. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 April 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,6-10 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 and 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.                      6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION****Response to Restriction Requirement**

1. Applicant's election with traverse of the inventions of Group I, Claims 1-2, 4 and 6 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the instant claims correspond to Example 1 in the Administrative Instructions under the PCT, Annex B. This is not found persuasive because the inventions of Group I lacks a special technical feature because it does not make a contribution over the prior art.

See PCT Annex B, Part 1 (b). Applicant is again referred to PCT Rule 13.2.

**13.2 Circumstances in Which the Requirement of Unity of Invention Is to Be Considered Fulfilled**

Where a group of inventions is claimed in one and the same international application, the requirement of unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art. (Underlining added.)

For the reasons set forth in the rejections below, the special technical feature linking the two inventions, does not provide a contribution over the prior art

2. The requirement is still deemed proper and is therefore made FINAL. Claims 7-10 and 12-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention. Applicant is reminded that if claims directed to the product are elected, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined. See M.P.E.P. § 821.04.

**Claim Rejections - 35 USC § 102(b)/§ 103(a)**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. ***Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schreyer, Bailey or Roura.***

7. Schreyer, referenced by applicant in the specification, teaches stabilizing tetrafluoroethylene (TFE) hexafluoropropylene (HFP) copolymers by removing the unstable end-groups (col. 1, lines 11-19). Contrary to the implication by applicant in the instant specification that Schreyer requires 100-600 ppm of a salt or a base, Schreyer only teaches that the rate of formation of stable end-groups is increased by the presence of the salt or base (col. 3, lines 1-3). Schreyer specially teaches that "*--- the process can be carried out in the absence of any salt or base*" and also teaches that "*--- the concentration of the base or the salt may be as low as 5 parts per million based on the polymer*" (col. 3, lines 48-53). Thus, one of ordinary skill in the art would have readily envisaged using no salt or a base or using as little as 5 ppm. Examples IV-B, -D and -F in fact exemplify 5 ppm. The use of ammonia as in Example 1 would also be expected to meet applicant's limitation of 50 ppm or less of a basic component, because it would be expected that residual ammonia would be removed in the thermal treatment and or drying at 250°C for 18 hrs. The bases and salts to be used are the same as those taught by applicant (col. 3, lines 19-47).

8. Schreyer does not teach a spin density measured by electron spin resonance (ESR). However, in as much as, (i) the unpaired electrons are attributed by applicant to the decomposition of unstable end-groups, (ii) Schreyer teaches and exemplifies removal of substantially all of the unstable end-groups, and (iii) the processes include those taught by applicant, the Examiner has a reasonable basis to believe that the melt formed stabilized TFE/HFP copolymers of Schreyer have spin densities within the limits of the instant claims.

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It has been held that where applicant claims a composition in terms of function, property or characteristic where said function is not explicitly shown by the reference and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Fitzgerald et al.*, 205 USPQ 594, 596 (CCPA 1980)..

9. The exemplified melt viscosities are within the limits of instant Claim 6.

10. Bailey and Roura both teach removal of the unstable end-groups of TFE/HFP copolymers with melt viscosities within the limits of the instant claims by heat treatments at about 340°C to 380°C in air containing water vapor for times sufficient to remove substantially all volatiles (see Claims 1). It would be expected that the absence of all volatiles corresponds to a destruction of the unstable end-groups and would be expected to therefore have spin densities as are instantly claimed. The burden is on applicant to show otherwise (*In re Best* ; *In re Fitzgerald et al.*; *supra*). As to product-by-process Claim 4, it is not seen that the process would result in a product materially different from that taught by either Bailey or Roura.

When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon applicant to provide clear and convincing factual evidence that the respective products do in fact differ in kind - *In re Brown*, 59 CCPA 1063, 173 USPQ 685 (1972); *In re Fessman*, 180 USPQ 324 (CCPA 1974) - and to come forward with evidence establishing unobvious differences between the claimed product and the prior art product. *In re Marosi* 218 USPQ 290.

11. **Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Carlson as evidenced by Bro.**

12. Carlson discloses the treatment of TFE/HFP copolymers with methanol under conditions which convert all of the carboxylic acid and acid fluoride end groups to methyl esters. The methyl ester end-groups are quite stable under prolonged storage at extrusion temperatures (col. 1, lines 29-64).

Examples VI and VII exemplifies the treatment of a TFE/HFP copolymer having a melt viscosity of  $7 \times 10^4$  poise as evidenced by Bro (see Carlson col. 4, lines 63-67). The method is disclosed to be a suitable alternative to that of Schreyer. As the unstable end-groups have been essentially removed there is a reasonable basis to expect that the spin density of the melt formed copolymer is within the limits of the

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instant claims. The burden is on applicant to show otherwise (*In re Best*; *In re Fitzgerald et al.*; *supra*).

As to product-by-process Claim 4, it is not seen that the process would result in a product materially different from that taught by Carlson. (*In re Brown*; *In re Fessman*; *In re Marosi*; *supra*).

13. **Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, Claims 1-2, 4 and 6 are rejected under 35 U.S.C. 103(a) as obvious over Goldmann.**

14. Goldmann discloses the after treatment of TFE/HFP copolymers with ammonia containing solutions at about 100°C converting essentially all of the COF groups to carboxamide groups (col. 3, lines 33-64). As can be seen from the data in Table 1 the concentration of carboxyl groups is also significantly reduced. Molded products so treated contain no bubbles (col. 4, lines 27-29). Although melt viscosities are not specifically disclosed it would be expected that molding grade resins would include those having melt viscosities within the limits of the instant claims. As the unstable end-groups have been essentially removed as evidenced by the absence of bubbles during molding, there is a reasonable basis to expect that the spin density of the melt formed copolymer is within the limits of the instant claims. The burden is on applicant to show otherwise (*In re Best*; *In re Fitzgerald et al.*; *supra*). As to product-by-process Claim 4, it is not seen that the process would result in a product materially different from that taught by Goldmann. (*In re Brown*; *In re Fessman*; *In re Marosi*; *supra*).

#### ***Art of Interest/Technological Background***

15. The prior art of record and not relied upon is considered pertinent to applicant's disclosure. Bekarian and WO'240 also disclose methods of stabilizing TFE/HFP copolymers which are believed to anticipate or make obvious the instantly claimed melt formed polymers and could be used in future rejections.

#### ***Future Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. R. Wilson whose telephone number is 703-308-2398.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 703-308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications. The unofficial direct fax phone number to the Examiner's desk is 703-872-9029.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-2351.

D. R. Wilson  
Primary Examiner  
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